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QUALCOMM INCORPORATED
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EXAMINER
LEE, ANDREW CHUNG CHEUNG

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
08/10/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/877,820	JAIN ET AL.	
	Examiner	Art Unit	
	Andrew C. Lee	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 13-20* is/are rejected.

7)☒ Claim(s) *11,12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1 – 20 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 – 3, 8 – 10, 13 – 14, 17, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Larsson (US 6707862 B1).

Regarding Claims 1, 13, Larsson discloses the limitation of a method to determine a next data rate in a mobile station of a wireless system ("to predictively determine a traffic channel data rate" correlates to determine a next data rate in a mobile station of a wireless system; Fig. 4, column 2, lines 58 – 67), comprising: receiving a congestion indicator from a base station, the congestion indicator includes at least one data bit ("the base station computes a suitable power correction command (interpreted as congestion indicator) which is then transmitted back to the mobile over the forward link...it is desirable to encode each command as a single bit" correlates to receiving a congestion indicator from

a base station, the congestion indicator includes at least one data bit; column 2, lines 41 – 55); Larsson discloses implicitly generating the next data rate in the mobile station as a function of data rate history and history of congestion indicator of the mobile station ("the data rate to be used in the next frame is chosen by comparing the estimated average bit energy Z with the set of thresholds, ..selects the data rate to be used by the transmitter from the set r_0, r_1,....r_m, ;..... estimates the statistical distribution of Z over the last few frames based on the current and previous values of Z" correlates to generating the next data rate, data rate history and history of congestion indicator; Fig. 4, column 6, lines 13 – 55).

Regarding Claims 2, 14, Larsson discloses the limitation of a method as in claimed Wherein generating the next data rate further ("to predictive determine a traffic channel data rate"; Fig. 4, column 2, lines 58 – 67) comprises: comparing at least one previous data rate to a target data rate for the mobile station ("transmitted energy per bit within the most recently transmitted data frame using the traffic channel power and the current data rate"; column 6, lines 17 – 23); and in response to a first result of comparing determining the next data rate by adjusting at least one data rate ("the data rate is then adjusted with respect to the actual statistics of Z by using the threshold"; column 7, lines 35 – 36).

Regarding Claim 3, Larsson discloses the limitation of a method of claimed wherein adjusting the at least one previous data rate performs a statistical analysis ("the data rate

is then adjusted with respect to the actual statistics of Z by using the threshold"; column 7, lines 35 – 36;).

Regarding Claim 8, Larsson discloses the limitation of a method as in claimed wherein the next data rate is generated at the mobile station and is independent of other mobile stations ("controlling the data rate of a wireless transmitter"; column 3, lines 63 – 64, column 4, lines 4 – 5;).

Regarding Claim 9, Larsson discloses the limitation of a method as in claimed wherein the maximum number is predetermined ("maximum aggregate data rate"; column 2, lines 1 – 6).

Regarding Claim 10, Larsson discloses the method as in claimed wherein the congestion indicator comprises multiple bits ("the incoming stream of power control bits"; column 10, lines 19 – 21).

Regarding claim 17, Larsson discloses an apparatus for determining a next data rate of an access terminal (Fig. 5), comprising: a receive circuit for receiving a congestion indicator having at least one data bit from an access network ("bit energy computer" correlates to a receive circuit for receiving a congestion indicator; column 7, lines 49 – 65, "computes a suitable power correction command (interpreted as congestion indicator) which is then transmitted back to the mobile over the forward link...it is desirable to

encode each command as a single bit" correlates to receiving a congestion indicator from a base station, the congestion indicator includes at least one data bit; column 2, lines 41 – 55); and Larsson discloses implicitly a data rate adjustment circuit coupled to the receive circuit, the data rate adjustment circuit being configured to generate the next data rate in the access terminal as a function of the data rate history and the history of the congestion indicator of the access terminal ("decimator, weighted average and comparator" correlates to a data rate adjustment circuit coupled to the receive circuit; Fig. 5, column 7, lines 59 – 67, column 8, lines 4 – 15; ("the data rate to be used in the next frame is chosen by comparing the estimated average bit energy Z with the set of thresholds, ..selects the data rate to be used by the transmitter from the set r_0, r_1,....r_m, ;..... estimates the statistical distribution of Z over the last few frames based on the current and previous values of Z" correlates to generating the next data rate, data rate history and history of congestion indicator; Fig. 4, column 6, lines 13 – 55).

Regarding claim 18, Larsson disclose the apparatus as in claimed further comprising a comparator configured to compare a previous data rate to a target data rate for the access terminal, the comparator being coupled to the data rate adjustment circuit, wherein the data rate adjustment circuit being configured to generate the next data rate by adjusting the previous data rate in response to a result of comparing the previous data rate to the target rate ("comparator" correlates to a comparator configured to compare a previous data rate to a target data rate for the access terminal; Fig. 5, column 8, lines 4 – 15).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 – 3, 8 – 10, 13 – 14, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson (US 6707862 B1) in view of Yao et al. (6097697).

Regarding Claims 1, 13, Larsson discloses the limitation of a method to determine a next data rate in a mobile station of a wireless system ("to predictively determine a traffic channel data rate" correlates to determine a next data rate in a mobile station of a wireless system; Fig. 4, column 2, lines 58 – 67), comprising: receiving a congestion indicator from a base station, the congestion indicator includes at least one data bit ("the base station computes a suitable power correction command (interpreted as congestion indicator) which is then transmitted back to the mobile over the forward link...it is desirable to encode each command as a single bit" correlates to receiving a congestion indicator from a base station, the congestion indicator includes at least one data bit; column 2, lines 41 – 55); Larsson discloses implicitly generating the next data rate in the mobile station as a function of data rate history and history of congestion indicator of the mobile station ("the data rate to be used in the next frame is chosen by comparing the estimated average bit energy Z with the set of thresholds, ..selects the data rate to be used by the transmitter from the set r_0, r_1,....r_m, ;..... estimates the statistical distribution of Z over the last few

frames based on the current and previous values of Z" correlates to generating the next data rate, data rate history and history of congestion indicator; Fig. 4, column 6, lines 13 – 55).

Larsson does not disclose explicitly generating the next data rate in the mobile station as a function of data rate history and history of congestion indicator of the mobile station.

Yao et al. teach explicitly generating the next data rate in the mobile station as a function of data rate history and history of congestion indicator of the mobile station ("the statistics provide indications of congestion of the data network. The functions also feature adjusting a transmission rate from the source to destination in response to a combination of the derived statistics" correlates to generating the next data rate in the mobile station as a function of data rate history and history of congestion indicator of the mobile station; column 2, lines 22 – 29, 42 – 45, 56 – 60; column 4, lines 54 – 58; column 8, lines 28 – 41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson to include generating the next data rate in the mobile station as a function of data rate history and history of congestion indicator of the mobile station as taught by Yao et al. in order to provide the rates of a group of connections to a common destination can be controlled together. Patterns of packet loss are monitored on the group of streams, thereby providing improved indicators of congestion compared to indicators based soley on the individual data streams (as suggested by Yao et al., see column 3, lines 11 – 15).

Regarding Claims 2, 14, Larsson discloses the limitation of a method as in claimed Wherein generating the next data rate further ("to predictive determine a traffic channel data rate"; Fig. 4, column 2, lines 58 – 67) comprises: comparing at least one previous data rate to a target data rate for the mobile station ("transmitted energy per bit within the most recently transmitted data frame using the traffic channel power and the current data rate"; column 6, lines 17 – 23); and in response to a first result of comparing determining the next data rate by adjusting at least one data rate ("the data rate is then adjusted with respect to the actual statistics of Z by using the threshold"; column 7, lines 35 – 36).

Regarding Claim 3, Larsson discloses the limitation of a method of claimed wherein adjusting the at least one previous data rate performs a statistical analysis ("the data rate is then adjusted with respect to the actual statistics of Z by using the threshold"; column 7, lines 35 – 36;).

Regarding Claim 8, Larsson discloses the limitation of a method as in claimed wherein the next data rate is generated at the mobile station and is independent of other mobile stations ("controlling the data rate of a wireless transmitter"; column 3, lines 63 – 64, column 4, lines 4 – 5;).

Regarding Claim 9, Larsson discloses the limitation of a method as in claimed wherein the maximum number is predetermined ("maximum aggregate data rate"; column

2, lines 1 – 6).

Regarding Claim 10, Larsson discloses the method as in claimed wherein the congestion indicator comprises multiple bits ("the incoming stream of power control bits"; column 10, lines 19 – 21).

Regarding claim 17, Larsson discloses an apparatus for determining a next data rate of an access terminal (Fig. 5), comprising: a receive circuit for receiving a congestion indicator having at least one data bit from an access network ("bit energy computer" correlates to a receive circuit for receiving a congestion indicator; column 7, lines 49 – 65, "computes a suitable power correction command (interpreted as congestion indicator) which is then transmitted back to the mobile over the forward link...it is desirable to encode each command as a single bit" correlates to receiving a congestion indicator from a base station, the congestion indicator includes at least one data bit; column 2, lines 41 – 55); and Larsson discloses implicitly a data rate adjustment circuit coupled to the receive circuit, the data rate adjustment circuit being configured to generate the next data rate in the access terminal as a function of the data rate history and the history of the congestion indicator of the access terminal ("decimator, weighted average and comparator" correlates to a data rate adjustment circuit coupled to the receive circuit; Fig. 5, column 7, lines 59 – 67, column 8, lines 4 – 15; ("the data rate to be used in the next frame is chosen by comparing the estimated average bit energy Z with the set of thresholds, ..selects the data rate to be used by the transmitter from the set r_0, r_1,....r_m, ;..... estimates the statistical

distribution of Z over the last few frames based on the current and previous values of Z" correlates to generating the next data rate, data rate history and history of congestion indicator; Fig. 4, column 6, lines 13 – 55).

Larsson does not disclose explicitly a data rate adjustment circuit coupled to the receive circuit, the data rate adjustment circuit being configured to generate the next data rate in the access terminal as a function of the data rate history and the history of the congestion indicator of the access terminal.

Yao et al. teach explicitly a data rate adjustment circuit coupled to the receive circuit, the data rate adjustment circuit being configured to generate the next data rate in the access terminal as a function of the data rate history and the history of the congestion indicator of the access terminal ("the statistics provide indications of congestion of the data network. The functions also feature adjusting a transmission rate from the source to destination in response to a combination of the derived statistics" correlates to explicitly a data rate adjustment circuit coupled to the receive circuit, the data rate adjustment circuit being configured to generate the next data rate in the access terminal as a function of the data rate history and the history of the congestion indicator of the access terminal; Fig. 1, column 2, lines 22 – 29, 42 – 45, 56 – 60; column 4, lines 54 – 58; column 8, lines 28 – 41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson to a data rate adjustment circuit coupled to the receive circuit, the data rate adjustment circuit being configured to generate the next data rate in the access terminal as a function of the data rate history and the history of the

congestion indicator of the access terminal as taught by Yao et al. in order to provide the rates of a group of connections to a common destination can be controlled together. Patterns of packet loss are monitored on the group of streams, thereby providing improved indicators of congestion compared to indicators based soley on the individual data streams (as suggested by Yao et al., see column 3, lines 11 – 15).

Regarding claim 18, Larsson disclose the apparatus as in claimed further comprising a comparator configured to compare a previous data rate to a target data rate for the access terminal, the comparator being coupled to the data rate adjustment circuit, wherein the data rate adjustment circuit being configured to generate the next data rate by adjusting the previous data rate in response to a result of comparing the previous data rate to the target rate ("comparator" correlates to a comparator configured to compare a previous data rate to a target data rate for the access terminal; Fig. 5, column 8, lines 4 – 15).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 4 – 7, 15 – 16, 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson (US 6707862 B1) in view of Bark et al. (US 6553235 B2).

Regarding Claims 4, 15, 19, Larsson discloses a method, an apparatus of claimed wherein generating the next data rate (Fig. 4, column 2, lines 58 – 67; referenced "to predictive determine a traffic channel data rate") further comprises:

Larsson does not disclose explicitly counting a number of consecutive same value congestion indicators; and if the number of consecutive same value congestion indicators is less than a predetermined maximum number, determining the next data rate by maintaining the at least one previous data rate.

Bark et al. disclose counting a number of consecutive same value congestion indicators (Fig. 4, element P1, column 5, lines 1 – 3); and if the number of consecutive same value congestion indicators is less than a predetermined maximum number (column 5, lines 4 – 6), determining the next data rate by maintaining the at least one previous data rate (column 5, lines 49 – 58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson to include counting a number of consecutive same value congestion indicators; and if the number of consecutive same value congestion indicators is less than a predetermined maximum number, determining the next data rate by maintaining the at least one previous data rate such as that taught by Bark et al. in order to provide method and system for monitoring potential congestion on radio

channels, and when appropriate, relieving the radio channel congestion as suggested by Bark et al., see column 1, lines 66 – 67, column 2, line 1.

Regarding Claims 5, 16, 20, Larsson discloses of a method, an apparatus as in claimed wherein generating the next data rate (Fig. 4, column 2, lines 58 – 67; referenced "to predictive determine a traffic channel data rate") further comprises:

Larsson does not disclose explicitly if the number of consecutive same value congestion indicators is equal to or greater than the maximum number, determining the next data rate by adjusting the at least one previous data rate.

Bark et al. disclose if the number of consecutive same value congestion indicators is equal to or greater than the maximum number (column 6, lines 19 – 20), determining the next data rate by adjusting the at least one previous data rate (column 5, lines 49 – 58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson to include if the number of consecutive same value congestion indicators is equal to or greater than the maximum number, determining the next data rate by adjusting the at least one previous data rate such as that taught by Bark et al. in order to provide method and system for monitoring potential congestion on radio channels, and when appropriate, relieving the radio channel congestion as suggested by Bark et al., see column 1, lines 66 – 67, column 2, line 1.

Regarding Claim 6, Larsson does not disclose a method as in claimed wherein for

a first congestion condition if the previous data rate is greater than the target data rate, adjusting comprises decreasing.

Bark et al. disclose a method as in claimed wherein for a first congestion condition if the previous data rate is greater than the target data rate, adjusting comprises decreasing (column 5, lines 6 – 8; lines 49 – 58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson to include wherein for a first congestion condition if the previous data rate is greater than the target data rate, adjusting comprises decreasing such as that taught by Bark et al. in order to provide method and system for monitoring potential congestion on radio channels, and when appropriate, relieving the radio channel congestion as suggested by Bark et al., see column 1, lines 66 – 67, column 2, line 1.

Regarding Claim 7, Larsson does not disclose a method as in claimed wherein for a second congestion condition if the previous data rate is less than the target data rate, adjusting comprises increasing.

Bark et al. discloses a method as in claimed wherein for a second congestion condition if the previous data rate is less than the target data rate, adjusting comprises increasing (column 5, lines 4 – 6; lines 49 – 58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson to include wherein for a second congestion condition if the previous data rate is less than the target data rate, adjusting comprises increasing such as that taught by Bark et al. in order to provide method and system for

monitoring potential congestion on radio channels, and when appropriate, relieving the radio channel congestion as suggested by Bark et al., see column 1, lines 66 – 67, column 2, line 1.

Allowable Subject Matter

8. Claims 11, 12, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed on 5/22/2007 with respect to claims 1 – 20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Umeda et al. (US 6909905 B2) disclose a mobile communication control system, which includes at least one mobile station and at least one base station, includes first through third parts.
- Knutsson et al (6128506) disclose a method of stabilizing a communication system having base stations and mobile stations using integrated control of both signal transmission power levels and signal congestion levels

- Dupont et al. (5974106) disclose a system is provided for multirate communications allowing for different data rates for each data unit on a channel, including both data units from different mobile units and from the same mobile unit.
- Walton Jr. et al. (5621723) disclose a means of power control on the reverse link of a CDMA network is disclosed. Specifically, the forward link from the base station to the subscriber unit is used to direct the subscriber unit to modify the output power radiated.
- Vanghi (US 7085581 B2) disclose in a communication network based on the TIA/EIA/IS-856 standard, or in other network types where forward link power control is desirable but where no reverse link channel or sub-channel to direct such power control is available, forward link rate request information from an access terminal may be used to infer carrier-to-interference (C/I) ratios at the access terminal.
- Olofsson et al. (US 6668159 B1) disclose a bit rate indicator for use in the mobile station of a radiotelephone system which provides an indication to the user of the maximal bit rate available in the current cell and the predicted bit rate the user can expect to achieve if a session were initiated in his present location.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C. Lee/::<7/31/2007>

EDAN ORGAD
PRIMARY PATENT EXAMINER
8/6/07